ENVIRONMENTAL ASSESSMENT

(File No. 200602640) Applicant: Pigeon Falls, LLC

PROPOSED STREAM ENCAPSULATIONS AT UNNAMED TRIBUTARIES TO THE WEST PRONG LITTLE PIGEON RIVER, IN PIGEON FORGE, SEVIER COUNTY, TENNESSEE

U.S. ARMY CORPS OF ENGINEERS
Nashville District, Regulatory Branch
in cooperation with the
TENNESSEE VALLEY AUTHORITY

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1.0 Proposed Activity

1.1 <u>Project Description</u>. Pigeon Falls, LLC (PFLLC) proposes to construct a commercial development known as Pigeon Falls Village (PFV) on an 85-acre tract located north-northeast of the intersection of Jake Thomas Road and Teaster Lane. The proposed development would include hotels, retail space, recreational attractions, a residential development, a parking garage, and a water feature mimicking a natural stream system.

Approximately 3,075' of intermittent/perennial stream channels and 272' of ephemeral stream channels would be impacted by the proposed development. These stream channels are parts of two unnamed tributaries to the West Prong Little Pigeon River (WPLPR). Both tributaries originate on the PFV property as narrow shallow channels with scattered herbaceous and hardwood riparian zones. Stream A is located on the property's western side and measures 1,189' (892' intermittent/perennial and 297' ephemeral). PFV would impact 835' of intermittent/perennial channel of Stream A and the remaining 57' of intermittent/perennial and 297' of ephemeral channels in the upstream portion would be impacted by a City of Pigeon Forge (CPF) road project, Pigeon Falls Lane. The channel width and depth are 2-3' and 1.5-2', respectively, with water depths less than 2". Pools, riffles, and point bars were not visible in the upper portions of the tributary. Macroinvertebrate life was observed. A small pond of 0.41 acres discharges to the south into a stream channel (Stream A-1) of 577' (237' on the subject site and 340' on the Teaster Lane R.O.W.). Stream B is located on the eastern side of the PFV property and measures 2.275' (2,003' intermittent/perennial and 272' ephemeral). The channel width and depth are 2-3' and 1.5-4', respectively, while water depths are less than 2". Macroinvertebrates were also found in this stream.

In areas where fill material is to be placed in the existing channels, french drains and pipe would be used to collect the subsurface groundwater. An impermeable layer would be constructed over the french drains and pipe to separate the subsurface flow from the proposed development. The water collected in the french drains would be discharged in the existing channels at the property boundaries (Appendix A).

Alternatives. PFLLC owns the property proposed for development in fulfillment of its purpose and need and, because of existing development in the area and the general lack of available land in Pigeon Forge, similar land economically feasible for this type of development could not be located (see item below). No available sites of this size devoid of streams or wetlands could be acquired where potential impacts could likely be lessened. Therefore, PFLLC did not rigorously examine other sites in the surrounding area for its proposed development. They considered alternative development schemes to avoid or minimize impacts to the stream channels. The applicant deemed these alternatives unacceptable for several reasons including the following:

- The physical location of the streams and the manner in which they traverse the property make it impossible for the proposed development to avoid.
- Due to the topography, the proposed cuts and fills and the final grades necessary for development would not allow preservation of the current channel gradients.
- Available acreage that meets the needs for retail/commercial development in the general vicinity is limited. Taking into consideration location, infrastructure benefits and transportation needs, a comparable site is not available in the Pigeon Forge area.

<u>Initial Mitigation Proposal.</u> PFLLC search did not identify suitable mitigation sites in the PFV vicinity. Therefore, compensation for stream mitigation impacts to 3,075' of stream initially consisted of making in-lieu-fee (ILF) payments of \$200/linear foot to the Tennessee Stream Mitigation Program (TSMP). In addition, PFLLC would incorporate, to the extent practicable, consideration of Leadership in Energy and Environmental Design (LEED) principles. A closed-loop, biologically filtered waterfall and stream system would be built on the eastern side of the property. The current stream system would be overlain by a vertically isolated collection system designed to provide treatment to and reduction of runoff volume from the site. No mitigation credit has been requested or will be granted for this feature. At its discretion and where practicable throughout PFV, PFLLC would implement other onsite water quality treatment options including pervious pavement in pedestrian and vehicular traffic areas, green roofs, storm water vaults, bioswales, rain gardens, rain barrels and/or cisterns, infiltration chambers, and other water quality structures.

<u>Final Mitigation Proposal</u>. As indicated in Sections 1.3 and 1.6.2 below, commitments were formulated during meetings among PFLLC, CPF, Tennessee Department of Environment and Conservation (TDEC), and other interested parties. TDEC has added the commitments as special conditions to its water quality certification (Appendix B). The commitments also satisfy Corps of Engineers (Corps) and Tennessee Valley Authority (TVA) permit mitigation requirements. As expressed in the water quality certification, mitigation will be granted proportionally as follows:

- Pursue LEED certification and use Low Impact Design (LID) techniques (35% of mitigation), which includes year end reports to agencies on water quality testing results
- Assist the City of Pigeon Forge with the development of a comprehensive stormwater management plan (20% of mitigation), and
- Off-site Physical Habitat Improvements including, if necessary, use of the TSMP (45% of mitigation).

Note: The Corps and TVA consider LEED and LID mitigation as non-traditional and are allowing its implementation on this project on a trial basis. Prior to this project, the Corps had accepted use of LEED and LID on only one permit decision, PFL (File 200600583), issued 15 May 2008. Benefits will be monitored, and based on the results, this type of mitigation may be accepted for other developments in the future. However, it is essentially being allowed here as a pilot project. The approval of this non-traditional mitigation should not be construed as an indication that the Corps or TVA will utilize it from this point forward.

1.2 <u>Purpose and Need</u>. The *basic purpose* of this project is to construct a development offering commercial, residential, and recreational attractions. For purposes of the Section 404(b)(1) Guidelines (Guidelines) of the Clean Water Act (CWA) (40 CFR 230), the proposed development fills are presumed to be "non-water dependent." In reaching this presumption, the Guidelines assume that practical alternatives not involving special aquatic sites (e.g., wetlands, riffle/pool complexes, etc.) or resulting in less damaging impacts on the aquatic environment are available. A compliance document rebutting the above presumptions and showing that the proposal would comply with the Guidelines with appropriate and practical conditions will be prepared and attached to the Corps Statement of Findings (SOF)/Findings of No Significant Impacts (FONSI) document. The Corps SOF/FONSI document is being prepared separately. The *overall project purpose* is to construct retail space, hotels, recreational attractions, a residential development, parking garage, and a water feature mimicking a natural stream system on an 85-acre tract located north-northeast of the intersection of Jake Thomas Road and Teaster Lane. We determined the overall project purpose based on information submitted by PFLLC.

- 1.3 Project Changes. Concerns for water quality and aquatic resources impacts were raised during the application's public interest review and the state's water quality certification processes. A meeting was held on 26 April 2007 at TDEC and attended by representatives of S&ME, CPF, PFLLC, and the U.S. Green Building Council. As a result of the meeting, an addendum to the permit application was included in a 1 May 2007 letter from PFLLC to TDEC, the Corps, and TVA (Appendix A). A follow-up meeting attended by representatives from TDEC, CPF, PFLLC, Gresham Smith & Partners, Waterfield Design, and S&ME, Inc. (PFLLC consultant) was held on 29 August 2007 to discuss the issues raised and formulate a response. On 13 September 2007, PFLLC submitted to the Corps information on the commitments formulated during the meeting. The following commitments were drafted: Pursue project and city LEED certifications, showcase project-specific use of Green Infrastructure and LID techniques, develop a city-wide Comprehensive Stormwater Management Plan, make Off-site Physical Habitat Improvements or if necessary. make ILF payments to the TSMP. Details of the supplemental information are provided in Appendix A. The Corps and TVA have agreed to these experimental mitigation measures provided the applicant comply with the annual water quality testing and reporting requirements. In the event state water quality standards are contravened, the applicant would reconstruct, replace, repair, or otherwise fix any parts of the design that are not contributing toward sustaining or improving upon state water quality standards of the receiving stream.
- 1.4 <u>Additional Proposed Area Development</u>. The Corps completed its environmental assessment (EA) and SOF/FONSI of the nearby Pigeon Falls Lane roadway construction proposal on 6 May 2008 (File No. 200600583). The Corps and TVA are also reviewing the following additional developments planned in the vicinity of PFV.
- 1.4.1 Pigeon Forge Lane (PFL). CPF proposes to construct 2,800' of roadway to serve the proposed PFV. PFL would additionally serve several other businesses and anticipated development ventures in the near future, e.g., the existing Belz Mall, proposed condos on a tract of land behind the mall, and a new CPF welcome center. PFL would connect to the anticipated new and improved Jake Thomas Road, provide alternative access to the Dollywood Theme Parks, and eventually connect to Middle Creek Road. (Public Notice 07-67, File 200600583). The DA permit for this proposal was issued on 15 May 2008.
- 1.4.2 <u>Teaster Lane/Jake Thomas Road Improvements and Parking Area</u>. As part of its regional road plan to address traffic problems, the CPF proposes to extend Jake Thomas Road, widen Teaster Lane, expand the intersection at Teaster Lane and Jake Thomas Road, and create a regional parking facility. (Public Notice 07-69, File 200701556).
- 1.5 <u>Decisions Required</u>. Section 301 of the CWA prohibits the discharge of dredged or fill material into waters of the United States (WUS) unless authorized by the Department of the Army (DA) pursuant to Section 404 of the same Act. The unnamed tributaries to the WPLPR are WUS as defined by 33 CFR 328. A DA permit under Section 404 of the CWA is required for the work. Section 26a of the TVA Act (16 USC 831y-1) requires that no dam, appurtenant work, or other obstruction affecting navigation, flood control, or public lands or reservations be constructed and thereafter operated or maintained across, along, or in the Tennessee River or any of its tributaries until plans for such construction, operation, and maintenance have been submitted to and approved by TVA. TVA is a cooperating agency in the preparation of this EA. TVA and DA permits are required for the work; therefore, the agencies must decide on one of the following:
 - issuance of a permit for the proposal
 - issuance of a permit w/modifications or conditions
 - denial of the permit.

1.6 Other Approvals Required.

- 1.6.1 TVA 26a Permit. In addition to other provisions of its approval, TVA would require the applicant to employ best management practices to control erosion and sedimentation, as necessary, to prevent adverse aquatic impacts. TVA has not finalized its 26a permit review of the proposal. If issued and since mitigative measures imposed in the TDEC water quality certification are considered non-traditional and experimental, the 26a permit could be revoked if the applicant does not comply with the state water quality standards (see Section 1.6.2 below).
- 1.6.2 Water Quality Certification. The proposed work requires a TDEC water quality certification pursuant to Section 401(a)(1) of the CWA. TDEC issued the required certification for the proposal on 7 December 2007 (Appendix B). The certification is valid until 6 December 2012. The agency incorporated 14 special conditions to ensure that the proposed activities will not violate applicable state and federal water quality standards and provisions. Special Conditions (SC) 8 to 12 and 14 address in detail the stream mitigation requirements and proportionate credits. In particular, SC 8A requires LEED certification and use of LID techniques (35% of mitigation). Similarly, SC 8B requires implementation of a comprehensive stormwater management plan (20% of mitigation). Also 8C allows for potential offsite mitigation including, if necessary, use of the TSMP (45% of mitigation). SCs 9 to 11 specify post-construction water quality monitoring and reporting requirements. The monitoring would occur quarterly at the three confluences of the onsite streams and additional locations within the development. In addition, a similar development would be chosen within the city for monitoring that has none of these storm water designs. The applicant would report their findings every year on October 31 until TDEC notifies the permittee that reporting can be terminated. A requirement to secure the services of an approved environmental consultant is indicated under SC 12. Finally, SC 14 clarifies that LEED and LID requirements are just a demonstration project (i.e., experimental), and the information gathered will be used for future permitting decisions by TDEC and other agencies.
- 1.7 Scope of Analysis. The Corps must determine the proper scope of analysis for National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), Endangered Species Act (ESA), and any other laws related to its permit actions. Once the scope of analysis is established, the Corps can address the impacts of the specific activity requiring a DA permit and those portions of the entire project over which we have sufficient control and responsibility to warrant federal review. This is generally coincidental with the definition for "Permit Area". NEPA Implementation Procedures for the Corps Regulatory Program (33 CFR 325, Appendix B, Paragraph 7b) list the typical factors to be considered in determining whether sufficient control and responsibility exists to warrant federal review: (a) whether the regulated activity comprises merely a link in a corridor type project, (b) whether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity. (c) the extent to which the entire project will be within Corps jurisdiction, and (d) the extent of cumulative federal control and responsibility. In determining whether sufficient cumulative federal involvement exists to expand the scope of federal action outside the "Permit Area," we should consider whether other federal agencies are required to take federal action under other environmental review laws and/or executive orders.

Once the scope of analysis is determined, alternatives to the proposed action (Section 4) and primary, secondary, and cumulative impacts (Section 3.5) must be considered in the appropriate NEPA analysis. However, when analyzing secondary impacts, the strength of the relationship between those impacts and the regulated portion of the activity should be considered, i.e., whether or not the impacts are likely to occur even if the permit is not issued, in deciding the level

of analysis and what weight to give these impacts in the decision. This attenuation should consider whether another project, not requiring a permit, could likely occur at the site or in the vicinity, and whether its impacts would be similar to impacts of the project requiring a permit.

The proposed action consists of the construction of a leisure mixed-use complex requiring the elimination of 3,347° of stream channels. In light of the above discussion, we have determined that the scope of analysis for this DA permit application includes the entire property. Therefore, the entire 85-acre tract is the "Permit Area" for purposes of this review.

1.8 Existing Setting. Since May 2004, Mr. J. Ruben Hernandez, Project Manager, Regulatory Branch, and TVA staff have visited the site vicinity several times. The PFV property is located north-northeast of the intersection of Jake Thomas Road and Teaster Lane, in Pigeon Forge, Tennessee. A majority of the 85-acre property consists of a series of narrow ridges separated by narrow valleys running in a southwest-northeast direction. Elevations range from approximately 1040-foot to 1170-foot mean sea level. Approximately 20% of the property has undergone vegetation clearing to a certain degree. Evidence of past timber harvests were observed. The two small tributaries flow southeast (Stream A) and south (Stream B) through most of the property. Both streams originate as narrow, shallow channels with generally good canopy and transition to 2' to 3' wide variable depth channels.

2.0 Public Involvement Process

2.1 <u>General</u>. On 1 August 2007, the Corps issued Joint Corps/TVA Public Notice (JPN) No. 07-68 to advertise the proposed work (Appendix C). The JPN was distributed to a wide list of interested parties that included federal, state, and local agencies, elected officials, private/public organizations, news agencies, commercial navigation interests, adjacent property owners, and individuals. Comments to the JPN were received from the Tennessee Historical Commission (THC), U.S. Fish and Wildlife Service (USFWS), and U.S. Environmental Protection Agency (EPA). The comments have been summarized below and a copy included in Appendix D. Where a response to the comment was warranted, one is provided to clarify the issues raised.

TDEC issued a public notice and held a public hearing on 28 June 2007 in Pigeon Forge on four related projects in the city's vicinity. These projects included PFV (NRS 06.250), PFL (NRS 06.258), Jake Thomas Road extension and Teaster Lane Improvements (NRS 07.034) and Riverwalk Park (NRS 05.422). Under review were permits applications from PFLLC, Riverwalk Park LLC, and CPF for wetland and stream alterations associated with developments affecting unnamed tributaries to the WPLPR. Comments on each proposal from one federal agency, one nongovernmental conservation organization, and four private citizens were received. Issues raised in these comments are addressed in this EA.

2.2 Public Notice Comments.

- 2.2.1 In a letter dated 6 August 2007, THC concurred that the project area contained no archaeological resources eligible for listing in the National Register of Historic Places (NRHP). <u>Response</u>: No response necessary.
- 2.2.2 By letter dated 31 August 2007, USFWS stated that based on available collection records no federally listed or proposed threatened or endangered species were known to occur in the impact area. Therefore, based on the information available at the time, it believed that Corps obligations under Section 7 of the Endangered Species Act had been fulfilled. Provided PFLLC

makes appropriate payment to the TSMP, the proposal should not result in significant impacts to fish and wildlife or their habitats, and USFWS would not object to the proposal. <u>Response</u>: PFLLC has agreed to adequately mitigate for the impacts resulting from construction of the project. Impact mitigation would be through project-specific use of Green Infrastructure and LID techniques, pursuing project and city LEED certifications, developing a city-wide Comprehensive Stormwater Management Plan, making Off-site Physical Habitat Improvements, or if necessary, make ILF payments to the Tennessee Stream Mitigation Program (TSMP).

- 2.2.3 In a 20 November 2007 email, the Environmental Protection Agency (EPA) recommended protection of the existing uses of the Tier 1 receiving streams. EPA welcomed PFLLC's offer of LID, "green" building, subsurface storm water management system, etc., and other innovations as well as promises to maintain downstream flow and water quality. The agency recommended that conditions for appropriate construction best management practices (BMPs) be included in accordance with state requirements. In addition, post-construction monitoring conditions (e.g., flow, pH, TSS, turbidity, metals, etc.) should also be included in the permit. An adaptive management clause should also be included in the event state water quality standards are contravened. Finally, EPA recommended that any monies paid into the TSMP to offset any remaining impacts not mitigated on site or via alternative storm water mitigation BMPs should be paid prior to or concurrent with construction. Response: Same response as in Paragraph 2.2.2. In satisfying the conditions stipulated in TDEC's water quality certification (Appendix C), PFLLC would satisfy all of EPA's requirements and recommendations
- 2.3 <u>Applicant's Rebuttal</u>. We furnished PFLLC the JPN objections/comments (Section 2.2) for an opportunity for resolution or rebuttal. PFLLC also received similar objections/comments from TDEC associated with the response to the 401 certification public notice. Representatives from TDEC, CPF, S&ME, Inc., Gresham Smith & Partners, and Waterfield Design met on 29 August 2007 to discuss the project. In a letter dated 13 September 2007, S&ME, Inc. responded to the substantive issues raised by the commenters. The following commitments were drafted and are being offered by PFLLC: To showcase project-specific use of green infrastructure and LID techniques; Make ILF payments to the TSMP; Pursue project and city LEED certifications; Develop a city-wide comprehensive stormwater management plan; and Make off-site physical habitat improvements. A copy of S&ME's response on behalf of PFLLC has been included in Appendix E.
- 2.4 <u>Supplemental Public Notice</u>. The basic precept of the public notice process is to include sufficient information to give a clear understanding of the nature and magnitude of the activity to generate meaningful comment. A supplemental notice must be issued whenever there is a change in the application data that would affect the public's review of the proposal or when the probable impacts to the aquatic environment resulting from the changes are substantially greater from those described in the original notice. The changes and/or commitments described in Section 1.3 (Project Changes) are intended to address the environmental impacts that were identified during the public involvement phase. The mitigative measures listed would not result in additional project impacts. We believe advertisement of the changes would not have substantially affected the public's review of the proposal. Therefore, issuance of a revised JPN to advertise the changes is not warranted. The environmental evaluation conducted in Section 3 of this decision document is based on the final proposal including all changes.

3.0 Environmental and Public Interest Factors Considered

3.1 <u>Introduction</u>. 33 CFR 320.4(a) states that the decision whether to issue a DA permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed

activity and its intended use on the public interest. All factors that may be relevant to the proposal must be considered (for full list see JPN 07-68, Appendix C). The following sections describe the relevant factors identified and provide a concise description of the impacts of the proposed action. The baseline data discussed in this section has been obtained from information provided by PFLLC, field investigations, input to the JPN, agency data, and other sources.

- 3.2 <u>Physical/Chemical Characteristics and Anticipated Changes</u>. The relevant blocks are checked with a description of the impacts. An unchecked block denotes that negligible to no adverse effects are expected.
- (x) substrate Observations made by S&ME, Inc., in support of the DA/TVA permit application indicated that the substrate is primarily mud and silt throughout the entire length of the impacted channels with a few bedrock outcrops in the lower portion of the streams. Approximately 8,600 square feet (SF) or 0.20 acres of this material would be lost when the existing channels are filled. When compared to the amount of available biologically productive substrate in the area, this impact is considered minor in nature. PFLLC plans to mitigate for this impact through commitments formulated during the project review phase (Section 1.3).
- (x) currents, circulation or drainage patterns Although stream modifications would occur as a result of the proposed project, the overall property drainage pattern would not be substantially altered. In areas where fill material is to be placed over the existing channel, french drains and pipe would be used in the channel to collect the subsurface seeps. An impermeable layer would be constructed over the french drain and pipe to separate the subsurface flow from the proposed development. The water collected in the french drain would be discharged in the existing channels at the property boundaries.
- (x) suspended particulates, turbidity There would be minor releases of sediment and turbidity associated with the site development activities. The proper use of best management practices/ standards and conditions would minimize these impacts. Terms and conditions set forth in the Corps and TVA permits and the TDEC 401 water quality certification would require that all stream work be performed in a manner that would prevent violations of water quality standards. Examples of these special conditions include requirements to apply green infrastructure and LID techniques, LEED certification, a comprehensive stormwater management plan, off-site physical habitat improvements or, if necessary, ILF payments to the TSMP.
- (x) water quality (temperature, color, odor, nutrients, etc) The project site is located in the Lower French Broad River Watershed (HUC 06010107). The proposed action would impact two first order unnamed tributaries of the WPLPR. The two streams have not been assessed for support of classified uses. The WPLPR discharges into the Little Pigeon River (LPR) approximately 10 miles downstream of the site. The LPR in turn discharges into the French Broad River. The WPLPR and LPR are Tier 1 waters listed as impaired in the draft version of the 2008 TDEC 303(d) list. The WPLPR is a category 5 river and is impaired by the presence of e-coli, siltation, and phosphorus. The LPR is a category 4a river and is impaired by the presence of e-coli from septic tanks and collection failure. Water quality of the unnamed tributaries within the project site is degraded. For purposes of this review, PFLLC has designated the unnamed tributaries as Streams A and B. On 18 October 2006, S&ME conducted flow measurements in the streams finding that Stream A was dry for much of its length and Stream B produced a flow of only 0.012 cubic feet per second. With an average precipitation of 44.3 inches (in) per year, October is historically the driest month with an average of 2.6 in. According to National Weather Service historic records, Pigeon Forge received an average amount of precipitation in October 2006

(approximately 2.5 in). Between 13 October and 18 October 2006 rainfall was experienced on three days, 16 October (0.05 in.), 17 October (0.35 in.), and 18 October (0.25 in.). Not withstanding the amount of rain received during the previous two days and during the test day, Stream B's flows were insubstantial. The lack of flow in Stream A confirms TDEC's assessment that the stream is ephemeral for about the first 300' and intermittent/perennial for the remaining of its length.

Excavation and grading activities to develop the infrastructure and construct the building pads would result in minor to moderate short-term localized increases in turbidity and siltation. However, the employment of sound construction techniques, including use of effective erosion and sedimentation control measures, would minimize impacts to the receiving streams. Sound construction techniques include, but are not limited to adherence to existing codes and laws, employment of safety practices, use of quality materials, and minimization of errors.

Conditions in the state-issued water quality certification (Appendix B) would require PFLLC to showcase project-specific use of Green Infrastructure and LID techniques, pursue project and city LEED certifications, assist the City in the development of a city-wide Comprehensive Stormwater Management Plan, make Off-site Physical Habitat Improvements, monitor surface water discharges at various locations to prove the adequacy of the stream mitigation and water quality commitments, or if necessary, make ILF payments to the TSMP. The project site would be monitored for water quality quarterly and year-end reports will be submitted by PFLLC on this nontraditional mitigation. Post- construction monitoring has been required by TDEC to evaluate whether the project mitigation is working or if PFLLC needs to make changes to the system to improve the water quality leaving the site. Post-development sampling will be compared with results from other non-LID sites. PFLLC would report its findings every year on October 31 until TDEC notifies that reporting can be terminated. Water quality conditions are expected to return to background levels when construction ceases. Long-term adverse impacts are expected to be minimal.

- (x) flood control functions The proposed facilities would be constructed outside of WPLPR's designated floodway and 100- and 500-year floodplains. The proposed development is being designed to appropriately collect and redirect stormwater so as to minimize flooding potential.
 - () storm, wave, and erosion buffers No adverse effects.
- (x) baseflow Baseflow can de defined as the normal dry-weather flow which is mainly derived from groundwater. The proposed filling of the two unnamed streams would impact baseflow since french drains and pipes would be used in the channel (buried under the fill) to collect subsurface flows. An impermeable layer would be constructed over the french drain and pipe to separate the subsurface flow from the proposed development. In addition, a collection system with subsurface treatment is designed to collect/treat stormwater runoff from the majority of the new proposed area roadways (i.e., PFL and the Teaster Lane/Jake Thomas Road Improvements and Parking Area advertised under separate public notice (Section 1.4)). Because the impacted channel areas are small and measured flows are reduced, the proposed action would have minor negative effects on baseflow in the overall WFLPR watershed.
- 3.3 <u>Biological Characteristics and Anticipated Changes</u>. The relevant blocks are checked with a description of the impacts. An unchecked block denotes that negligible to no adverse effects are expected.

- (x) special aquatic sites (wetlands, mudflats, pool and riffle areas, vegetated shallows, sanctuaries, and refuges, as defined in 40 CFR 230.40-45) As indicated in the "substrate" paragraph in Section 3.2, streambed composition is primarily mud and silt with a few bedrock outcrops in the lower portion of the channels. A few small shallow pools/riffles and sediment deposition areas were observed just upstream of the existing pond. However, Stream B showed small shallow pools and small sediment deposition areas throughout most of its length. The reduced flows, shallow depths (2 in. average), and limited number of riffles and pools combined with the lack of fish species would result in minimal macroinvertebrate loss at the site. Wetlands do not exist on the property. Therefore, impacts on special aquatic sites would not be substantial.
- (x) habitat for fish and other aquatic organisms The affected streams are characterized by the presence of mud and silt substrate and very limited in-stream habitat (i.e., pools, riffles, and point bars) near the lower end of the reaches. Fish were not observed; however, macro-invertebrate life was present. Canopy cover ranges from open in limited cleared portions of the site to generally good (upper reaches) to moderately dense (lower reaches) and streambank stability from fair (upper reaches) to good (lower reaches). The proposal would eliminate the streambed composition and permanently reduce the biological productivity of the impacted areas (approximately 0.20 acre). However, this impact would be minor since the affected areas constitute just a small fraction of the available aquatic habitat in this watershed. A water feature is planned on the eastern portion of the development that would mimic a natural stream system by incorporating natural substrate and a non-chlorinated water source. This feature is a closed loop system that would be maintained by the applicant as part of the development and, therefore, TDEC and the other permitting authorities are not allowing any mitigation credits to off-set the effects of this project.
- (x) wildlife habitat PFLLC proposes to develop PFV, a leisure mixed-use project on 85 acres of land located north-northeast of the intersection of Jake Thomas Road and Teaster Lane. Preliminary estimates project construction of approximately 700,000 SF of retail space, seven acres of outdoor/indoor family recreation, a 12-acre, year-round, waterpark, 2,000 condo-hotel rooms, and over 8,000 parking spaces (± 25 to 30 surface acres including driveways). PFLLC's application describes the areas adjacent to streams A and B as physically disturbed by past logging practices. The riparian zones consist of scattered herbaceous species and hardwoods. A manmade pond approximately 0.41 acres in size is located on the property and connected to Stream A. Surrounding land use to PFV is agricultural and increasingly commercial. The proposed site grading activities which are required to develop the infrastructure and provide building pads would result in the permanent loss of all wildlife habitats within property boundaries. Due to the relative abundance of upland vegetation and common wildlife species in the area and region, including the Great Smoky Mountains National Park, and the present disturbed/fragmented state of the property, impacts on wildlife and their habitats would be insignificant.
- (x) endangered or threatened species A review of existing records did not reveal the presence of any federally listed threatened or endangered (T/E) species or designated critical habitat at the project site. In response to JPN 07-68, USFWS stated by letter dated 31 August 2007 (Section 2.2.2), that it believes the requirements of Section 7 of the Endangered Species Act of 1973, as amended, have been fulfilled. Based on a review of all relevant information, the Corps and TVA have reached a "no effect" determination concerning T/E species.
- (x) biological availability of possible contaminants in dredged/fill material To the Corps' and TVA's knowledge, no contaminants have been identified or are suspected in the fill material.

- 3.4 <u>Human Use Characteristics and Anticipated Impacts</u>. The relevant blocks are checked with a description of the impacts. An unchecked block denotes that negligible to no adverse effects are expected.
- (x) existing and potential water supplies; water conservation Our permit database does not contain any records of municipal or industrial raw water intakes on the WPLPR. In 2005, TVA and the Corps approved Sevierville Water Systems' proposal to construct a 12 million gallon per day raw water treatment plant, associated intake, and finished water line on McCroskey Island at French Broad River Mile 27.5L. In addition, a golf course irrigation intake permit has been recently granted to the Sevierville Water and Sewer Department at Mile 3.2 of the LPR. Neither the Corps nor TVA is aware of any plans for future intakes or dams on any of these rivers. Therefore, impacts on existing/potential water supplies would be negligible. The proposed action would not affect the availability of water or opportunities to reduce demand and improve efficiency. The commitments by PFLLC and CPF described in Section 1.3, e.g., LID, LEED, stormwater management plans, etc., would incorporate water conservation techniques into the development to lessen the overall impact of this development on the area's existing resources.
- (x) water-related recreation The two unnamed WPLPR tributaries, labeled streams A and B for purposes of this review, are not suitable for recreational uses such as canoeing, kayaking, or the operation of any type of motorboat or personal watercraft. Although fishing is not possible at the site, opportunities exist downstream in the WPLPR (receiving stream). However, fish caught there may not be suitable for human consumption. The proposed action would have no adverse effects on the recreational uses that could potentially occur on the two unnamed tributaries and only negligible adverse effects on the recreational uses of WPLPR or LPR located downstream.
- (x) aesthetics As indicated in the existing setting and wildlife habitat paragraphs, human activity (logging) has already modified about 20% of the PFV site. The proposed action would cause an additional short- and long-term disruption to area aesthetics. However, the development is typical of many found in this rapidly growing city and region and would not be out of character. Therefore, impacts would not be substantial.
- (x) traffic/transportation patterns PFV is located north-northeast of the intersection of Teaster Lane and Jake Thomas Road, in Pigeon Forge. The site is close to other retail facilities and existing and proposed infrastructure. As part of its long-range road improvements to address traffic problems, CPF plans the following projects: PFL, Jake Thomas Road extension, widening of Teaster Lane (will accommodate nine lanes of traffic), expansion of the intersection of Teaster Lane and Jake Thomas Road, and creation of a regional parking facility accessible from Teaster Lane. In addition to PFV, the planned road improvements would serve a variety of developments including the proposed Main Street Marketplace and West Terrace projects. The Jake Thomas Road extension, which would be accessed in part by PFL, would eventually link the Parkway (US 321/441) in Pigeon Forge to the Dollywood theme park and the Middle Creek Road regional bypass. Dollywood is approximately 1.5 miles from PFV.

Road improvement project are being planned for the area to improve capacity, flow, and safety (see above and Section 1.4). Many area streets appear to be reaching the limits of their service capacity to accommodate the short- and long-term highway traffic increases during and after construction, respectively. Decisions regarding highway capacity, connections, and geometric design rests with state and/or county highway departments and are normally accepted by the Corps and TVA.

- () energy consumption or generation No adverse effects.
- () navigation No adverse effects.
- (x) safety Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. The U.S. Occupational Safety and Health Administration (OSHA) is the federal agency responsible for promoting the safety and health of workers by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. In Tennessee, the Department of Labor and Workforce Development, Division of Occupational Safety and Health (TOSHA), partners with OSHA in providing safety standards, technical assistance, and consultation programs for construction related activities.

TOSHA's safety compliance section is responsible for enforcement of the Tennessee Occupational Safety and Health Act of 1972 (Title 5, Chapter 3) with emphasis on employee exposures to physical hazards. Physical hazards include but are not limited to construction, machine hazards, walking and working surfaces, flammable and combustible liquids, trenching, motorized equipment, electrical, explosives, fire protection, compressed gases, welding and means of egress. TOSHA staff is responsible for scheduling inspections based on reports of employee's who may be exposed to imminent danger, work-related fatalities or catastrophes, complaints or referrals from other agencies, or programmed inspections.

The responsibility for enforcing safety laws and determining construction safety compliance matters related to the PFV development rests with OSHA and TOSHA. The Corps and TVA will normally not be involved in decisions pertaining to those issues. Water safety related issues are negligible or non existent.

(x) air quality – Tennessee is subject to the National Ambient Air Quality Standards which limit outside air concentrations of six pollutants: particulate matter (<2.5 μ m & <10 μ m), sulfur dioxide, carbon monoxide, ozone (8-hour & 1-hour), nitrogen dioxide, and lead. The EPA Air data website (http://www.epa.gov/oar/data/geosel.html) indicates that Sevier County is a "non-attainment" area concerning 8-hour ozone criteria air pollutant.

Construction and utilization of the leisure mixed-use development would result in minor emissions of air pollutants. During construction activities, combustion exhaust would be emitted from fuel-burning engines in vehicles and construction equipment. Fugitive dust could result from disturbance of ground surfaces, blasting of rock, movement of spoil, and placement of fill for the building pads and infrastructure. Best management practices would minimize such emissions. These emissions would be small, temporary, intermittent, and transitory during the construction period, and would have no significant impact on air quality. Use impacts would be limited to fuel-burning vehicle exhaust associated with employee and customer transportation to and from the development. Construction and use of the new development and facilities would have no adverse effect on compliance strategies for achieving attainment of the 8-hour ozone standard.

Section 176(c) of the Clean Air Act (CAA) requires that federal agencies assure that activities they engage in (e.g., agency actions, permits, licenses, etc.) conform to federally approved CAA state implementation plans. The Corps has made a conformity applicability determination for this permit action and has documented such compliance in its Statement of Findings/FONSI document.

- (x) noise The future PFL and Jake Thomas Road extension projects would enclose the west, north, and east property boundaries and Teaster Lane presently borders on the south. Commercial retail occurs along a portion of the northwest boundary where it connects to Teaster Lane. Very few private residences exist close to the site. The nearest residence is located approximately 400' from the southeastern property boundary. Noise intensity would increase moderately above background levels during the construction phase. The operational/utilization phase would result in moderate long-term increases above background levels. Long-term noise level increases, resulting mostly from highway traffic, would not be substantial and compare to current levels emanating from the nearby streets and commercial development.
- (x) historic properties and cultural values A Phase I archaeological survey report, A Phase I Archaeological Survey of the Proposed Riverwalk Park Development (Management Area A: Uplands) Along Teaster Lane in Pigeon Forge, Sevier County, Tennessee, was completed by DuVall & Associates, Inc., in 2004 (Appendix F). The report documents that no archaeological sites were identified on the PFV site. One historic structure was identified within view of the project area, however, it was recommended ineligible for the NRHP. The Corps and TVA agree with this conclusion. In a letter dated 6 August 2007, THC concurred with the Corps that no NRHP listed or eligible properties would be affected by the proposal.
- (x) land use classification Since the PFV site forms part of the former Jake Thomas Farm, the historical land use was agricultural. As indicated in Section 1.8, a portion of the property has undergone clearing to certain degree and presents evidence of past timber harvests. To the west, at the point where the new PFL would intersect Teaster Lane, the land is in commercial use. The proposed activity would alter the present land uses. Prior to construction, the property would need to be zoned for the type of use indicated by PFLLC. The primary responsibility for determining zoning and land use matters rests with state, local and tribal governments. The Corps will normally accept decisions by such governments on those issues.
- (x) conservation The PFV project would permanently eliminate approximately 0.20 acres of aquatic habitat and nearly 85 acres of wildlife habitat. As indicated elsewhere in this document, the affected streams possess marginal to poor aquatic macroinvertebrate habitat. They are characterized by the presence of mud and silt substrate and very limited in-stream habitat (i.e., pools, riffles, and point bars). Fish were not observed. Due to the abundance of upland vegetated areas in this region and the present disturbed/fragmented state of vegetation on the property, wildlife habitat impacts would be considered minor.
- PFLLC documented in its permit application efforts to avoid stream impacts (see Section 1.1). In addition, the city has developed the following mitigation commitments: Showcase project-specific use of green Infrastructure and LID techniques, pursue project and city LEED certifications, develop a city-wide comprehensive stormwater management plan, make off-site physical habitat improvements, or if necessary, make ILF payments to the TSMP.
- (x) economics The economic benefits of many projects are important to the local community and contribute to needed improvements in the local economic base, affecting factors such as employment, tax revenues, community cohesion, community services, and property values. The DA permit application package provides detailed information on the important economic benefits expected from PFV and other projects in CPF. Tourism is the primary revenue for CPF. Although the permanent population of the city is 5,500, services are provided for approximately 11 million annual visitors. All public services are designed to enhance the visitors' experience. The city

allocates approximately 42% of its annual budget to the tourism program. CPF is home to the top tourist attraction in the state, Dollywood (approximately 2.4 million visitors).

In 1998 Tennessee enacted the Convention Center and Tourism Development Financing Act which allows communities to develop strategic public facilities that will leverage private investment and bring even more visitors to the state. CPF has designed a Tourism Development Zone (TDZ) for that purpose (see map, Appendix G). Through the TDZ, CPF attempts to develop new Qualified Public Use Facilities (QPUF) that will in turn attract the best tourism products to the city and efficiently utilize the limited land that is still available for future development.

PFLLC has stated that PFV is expected to generate \$40 million in annual sales tax and is the primary funding source for CPF's \$182 million bonded infrastructure development program. The CPF has budgeted \$120 million for public improvements that directly benefit PFV, including a 140,000 SF civic events center, 5,000 garage and surface parking spaces, four miles of four- and six-lane roads (e.g., PFL, Jake Thomas Road Connector, Teaster Lane Improvements, and Westside Connector) with seven new signalized intersections, a new central trolley station, and improvements to the wastewater treatment plant and collection system. It is anticipated that the 85-acre PFV leisure mixed-use project would result in local economy benefits associated with the sale of goods and services and hundreds of jobs generated during the projected five year construction period (short-term effect). In addition, the local economy would benefit from approximately 3,000 permanent employment positions (long-term effect).

- () food and fiber production No adverse effects.
- (x) general environmental concerns This is a broad factor almost synonymous with the area's quality of life. All the relevant issues falling under this heading have been evaluated in this document. Special conditions have been added to minimize the unavoidable adverse environmental impacts identified.
 - () mineral needs No adverse effects.
- (x) consideration of private property Corps regulations at 33 CFR 320.4(g) state that authorization of work by the DA does not convey any property rights, either in real estate or material, or any exclusive privileges. Furthermore, a DA permit does not authorize any injury to property or invasion of rights or any infringement of federal, state or local laws or regulations. The use of this property would be consistent with uses for similar property in this area. It is not expected that the development of this property for roadways and construction of the PFV leisure mixed-use complex would result in considerable impacts to nearby public or private properties.
 - () floodplain values No adverse effect.
- 3.5 <u>Cumulative and Secondary Impacts</u>. The Council on Environmental Quality regulations define cumulative impact as "the environmental impact which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." The Corps considers every DA permit application on its own merits and assesses its environmental impacts within the proper scope of review for National Environmental Policy Act (NEPA) purposes. The scope of analysis for this DA permit application for evaluation of direct effects is limited to the "Permit Area" which for this particular application includes the entire 85-acre property. The Permit

Area impacts described in this document would result in minor adverse cumulative impacts on areas within our NEPA scope of review. A discussion of these impacts has been presented in Sections 3.1 to 3.4.

This project along with other similar intensive business and roadway developments recently completed or under review would occur near the WPLPR and within the Lower French Broad Watershed. Approximately 8.1 miles of the WPLPR in Sevier County is on the 303(d) list of impaired waters (see water quality in Section 3.2). Under TDEC's water quality standards, its antidegradation policy protects existing uses of all surface waters and prevents degradation of water identified as high quality. TDEC has classified the affected watershed as Tier I. However, the WPLPR is classified as Tier I only within the Great Smoky Mountains National Park. The two unnamed tributaries affected by this proposal are poor quality and confluent to the WPLPR within this reach and extending upstream slightly above Gatlinburg, Tennessee. The two unnamed tributaries are both first order streams originating within the project site so there are no impacts to other tributaries or upstream properties associated with this development. In high quality waters, degradation can only be allowed if it is in the public interest and there is no other alternative. As indicated in Section 1.1, taking into consideration location, infrastructure benefits and transportation needs, a comparable site for PFV is not available in the Pigeon Forge area. These projects would involve substantial public and private investment and are considered in the public interest.

The Corps' permit database did not reveal past actions directly affecting the two unnamed intermittent tributaries. However, a total of 21 past actions were identified in WPLPR watershed (the receiving stream) within 10 miles of the project (five miles upstream and downstream). The permitted actions include bridges, bank stabilization, utility line crossings, and an impoundment structure. The actions were permitted between 1981 and 2005. Neither the Corps nor TVA can predict the number of future DA and Section 26a permit applications that could affect the WPLPR channel, floodplain, or watershed. However, all future applications, including those presently under review, will be thoroughly evaluated for water quality and aquatic resource impacts. Because of the general and special conditions added to DA, TDEC, and TVA permits, the Corps' national permitting goals for no net loss to waters and wetlands, and the mitigation requirements, cumulative effects to WPLPR and its tributaries affected by these projects would be substantially reduced or avoided. Special conditions and the imposition of innovation mitigation (Section 4.4.3) would help ensure that the proposal's cumulative and secondary effects would be minor. Because of mitigation applicable to these projects, neither the Corps nor TVA expects water quality in WPLPR to worsen as a result of implementing these projects. See Appendix B for specific mitigation provisions of TDEC's PFV water quality certification issued to PFLLC.

4.0 Alternatives

4.1 Introduction. This section discusses alternatives as required by 40 CFR 230.10 and 33 CFR 320.4(a)(2). The relevant environmental issues identified in Section 3.0 were used to formulate the alternatives. The alternatives considered in detail are described in Section 4.2. Other alternatives not considered in detail are discussed in Section 4.3. The impacts of the alternatives considered in detail are compared in Section 4.4.

4.2 <u>Description of Alternatives</u>.

4.2.1 No Action. This alternative is one that results in no construction or work requiring a Corps or TVA permit. No Action could also be brought about by agency denial or applicant withdrawal of the DA and TVA permit application.

- 4.2.2 <u>Applicant's Final Proposal</u>. This alternative consists of the proposal and changes described in Sections 1.1 and 1.3. Neither the Corps nor TVA is a proponent or an opponent of the applicant's final proposal.
- 4.2.3 <u>Applicant's Final Proposal with Added Special Conditions</u>. This alternative consists of the Applicant's Final Proposal identified in Section 4.2.2 with the inclusion of special conditions to minimize/mitigate unavoidable environmental impacts to the maximum extent practicable.
- 4.3 <u>Alternatives not Considered in Detail.</u> PFLLC stated that no other property was available meeting its site selection criteria, e.g., size and convenient location in proximity to adequate infrastructure and existing development. Suitable sites may possibly exist in Sevier or adjacent counties meeting PFLLC's selection criteria. However, the resulting impacts would likely be similar in nature and magnitude, or greater (in the case of undisturbed land), to those of the selected site. The alternate site would likely require DA permits subject to NEPA provisions if WUS are present. The actual acceptability of any alternate site could only be evaluated after a full public interest review. Therefore, we have decided that further evaluations of potential alternate sites are not warranted in this document.

4.4 Comparison of Alternatives.

- 4.4.1 No Action. This alternative would result if no work occurs in WUS. No Action would be brought about by agency denial or applicant withdrawal of the DA/TVA permit application or by any development scheme not requiring filling the existing stream channels. The potential environmental impacts described in Section 3.0 would not occur. Conversely, the expected socioeconomic benefits also described in that section would not be achieved. No Action would not satisfy the applicant's stated purpose and need described in Section 1.2.
- 4.4.2 <u>Applicant's Final Proposal</u>. The proposed action described in Sections 1.1 and 1.3 would potentially have various adverse and beneficial environmental and socioeconomic effects. These potential effects have been listed in Section 3.0 above.
- 4.4.3 <u>Applicant's Final Proposal with Added Special Conditions</u>. This alternative would result in similar impacts and benefits to the alternative described in Section 4.4.2 above. Special permit conditions have been developed (see following paragraph) to minimize adverse impacts on water quality and the aquatic environment. The special conditions are reasonably enforceable and would afford appropriate and practicable environmental protection. After evaluating the applicant's discussion of site limitations and layout constraints, we have determined that this alternative appears to be the "least environmentally damaging practicable alternative" for purposes of satisfying the Section 404(b)(1) Guidelines of the CWA. As with the applicant's final proposal (Section 4.2.2), this alternative would also meet the applicant's stated purpose and need.

The following special permit conditions have been developed to satisfy legal and public interest requirements. In addition, some of these conditions help clarify the permit application and offer appropriate and practicable environmental protection.

- A preconstruction meeting must be held among representatives of the Nashville District Corps of Engineers, permittee, and contractor(s) to discuss the conditions of this permit. You should contact Mr. Ruben Hernandez of this office, telephone number (615) 369-7519, to arrange the required preconstruction meeting. *Justification: Clarify the permit application.*

- The work must be in accordance with the plans and information submitted in support of the proposed work, as attached. *Clarify the permit application.*
- You must have a copy of this permit available on the site and ensure all contractors are aware of its conditions and abide by them. Recommended at 33 CFR 325, Appendix A.
- You must comply with the conditions specified in the state water quality certification issued for your project as special conditions to this permit. Satisfy legal requirements.
- The discharge shall consist of suitable material free from toxic pollutants in toxic amounts. Minimize impacts on water quality and the aquatic environment.
- The fill created by the discharge shall be properly maintained to prevent erosion and other non-point sources of pollution. *Minimize impacts on water quality and the aquatic environment.*
- All channel work shall be performed during low flow periods. *Minimize impacts on water quality and the aquatic environment.*
- Siltation and erosion control methods, including entrenched silt fences and rock check dams, erosion control mats, etc., shall be used and in place prior to starting any work. All site preparations shall be conducted in a manner which minimizes any siltation of the stream below the project site. Appropriate siltation control shall be utilized in all phases of the work including the mitigation phase. *Minimize impacts on water quality and the aquatic environment.*
- Compensation for impacts to 3,075' of streams can consist of an in-lieu-fee payment of \$615,000 (@ \$200/linear foot) to the Tennessee Stream Mitigation Program. *Minimize impacts on water quality and the aquatic environment.*
 - Alternatively, mitigation may be provided proportionally as follows:
 - Pursue Leadership in Energy and Environmental Design (LEED) certification and use Low Impact Design (LID) techniques, which includes year end reports to agencies on water quality testing results (35% of mitigation)
 - Assist the City of Pigeon Forge with the development of a comprehensive stormwater management plan (20% of mitigation), and
 - Off-site Physical Habitat Improvements and, if necessary, use TSMP (45% of mitigation)

Justification: Minimize impacts on water quality and the aquatic environment.

- LEED and LID mitigation are considered non-traditional and are allowed on this project on a trial basis. Benefits will be monitored, and based on the results, this type of mitigation may be accepted for other future developments. Approval of the LEED and LID non-traditional mitigation for this project should not be construed as an indication that the Corps will utilize it from this point forward on all projects. Satisfy legal requirements.

Date Date

William L. James, Chief

Eastern Regulatory Section

Regulatory Branch Operations Division